AGENDA

MEETING: Maine Library of Geographic Information Board

DATE: Wednesday, March 17, 2004

TIME: 10:30 a.m. – 2:30 p.m.

LOCATION: Dept. of Transportation – Conference Room 227A & B

Time	Topics for Discussion	Leader
10:30 – 10:35	1. Approval of the February 18th Board minutes	John Holden
10:35 – 10:50	2. Update: Maine Land Cover Project	Barbara Charry Mike Smith
10:50 – 11:30	3. Funding discussion with GIS Executive Council Leadership – Elizabeth Hertz & Seth Barker	John Holden
11:30 – 11:40	4. APA Review of Proposed Digital Parcel Standards	Dick Thompson
11:40 – 11:50	5. Nominations for the Grant RFP Review Committee	Larry Harwood
11:50 – 12:00	6. Update: GPCOG	John Holden
12:00 – 12:30 LUNCH		
12:30 – 1:30	7. Spending potential cost savings ▸ AG's Review of Bond Legislation ▸ New/Expanded Projects ▸ Town Requests	Dan Walters
1:30 – 2:30	8. Annual Report	John Holden Dan Walters
Future Board Meeting Business/Updates		
	▸ Board's Vacancy Legislation Change ▸ Study Impact of Statewide System for Electronic of Deeds ▸ Development Tracking Project ▸ Tech Subcommittee on Infrastructure, Interoperability, & Interface	

GeoLibrary Board Meeting
By Conference Call
March 17, 2004 10:30 a.m. – 12:00 p.m.

Minutes

Board Member Conferees as follows:
John Holden, Chair
Jim Page, James W. Sewall
Marilyn Lutz, UMaine
Barbara Charry, Maine Audubon Society
Paul Mateosian, City of Bath
Ray Halperin, Dept. of Transportation
Robert Doiron, Maine Revenue Services
Will Mitchell, Mitchell Geographics
Dick Thompson, CIO

Not in Conference:
Ed Suslovic, Co-Chair
Jon Giles, City of Portland
Robert Faunce, Statewide Association Counties
Dennis Boston, Central Maine Power
Sean Meyers, Camp Dresser & McKee

Non-Board Member Conferees:
Mike Smith, Dept. Environmental Protection
Seth Barker, Dept. Marine Resources
Liz Hertz, State Planning Office
Dan Walters, DAFS/BIS – Staff to the Board
Larry Harwood, DAFS/BIS – Staff to the Board

Due to predicted severe weather conditions it was decided to cancel the scheduled meeting at MDOT. In order to handle some time critical matters of GeoLibrary Board business, it was decided to hold a meeting by conference call. Beginning about 10:30 a.m. Board members and guests logged in and upon achieving a quorum of Board members, the meeting began.

John Holden proposed that three items from the original March 17 agenda be acted upon in this conference: (1 Approval of the February 18th Board minutes, (2 Update on the Maine Land Cover Project, and (8 The annual report . All other business would be deferred to the next Board meeting. Barbara Charry noted that a discussion of item number 2 required information in number 7 Spending Potential Cost Savings. Dan Walters agreed to provide an abbreviated version of the cost savings report as part of item number 2. Otherwise, the Board accepted John's proposal.

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1. Approval of the February 18th Board minutes.

Jim Page moved to accept the February 18th minutes as drafted. The motion was seconded. The minutes were unanimously accepted.

2. Update Maine Land Cover Project

Dan Walters gave a short update on the latest spending figures and cost savings. Of the reported savings, four are certain as the agreements have been signed and the rest good estimates. The savings total $300,000. Several Board members wanted a figure for just the confirmed savings and Dan said he would try to calculate that after his report. The NRCS has contributed $400,000 to the orthophoto project. This means the total federal match is

$1.2 million and the Geolibrary needs to find more federal matching. There were questions about what the bond money could be spent on. Tom Howker explained that bond monies cannot be spent on operating expenses or state employees; he likened the situation to being able to buy a house, but not maintain it. John Holden suggested moving ahead and discussing financial matters in detail at the next regular meeting.

Mike Smith began an explanation of the land use/and cover initiative. Mike provided this paragraph for the minutes:

"The land cover project seeks to refine current land cover data for Maine by creating a new 5-meter land cover layer and a new 5-meter partial imperviousness layer for Maine. This project has been in the works for about a year. The project is integrated tightly with USGS and NOAA efforts to map land cover, imperviousness, and canopy closure at the 30-meter level for Maine. This integration has been crucial because it allows Maine, USGS, and NOAA to share many of the costs of developing such data, including contractor costs, image acquisition, classification process development, and field data collection. The project will begin this summer and be completed by summer 2005. The first phase will consist of acquiring 5-meter SPOT imagery which will be merged with 30-meter LandSat data. This will be used initially to create a 5-meter imperviousness layer for southern coastal towns of Maine. The merged data will then also be used as a basis for a 5-meter land cover product using a modified Maine Gap classification system. The budget for this project is currently at $320,000. The work will be performed by a vendor via the USGS Cartographic Services Contract. This allows us to capitalize on existing USGS and NOAA contributions to land cover mapping in Maine. We expect the contract to be in place by April 30."

In sum he was asking the Board for a contribution of at least $50,000 towards the project, which would generate at least that much in federal match for the Geolibrary and perhaps more depending on what arrangements could be made. This must be done quickly as the deadline is April 30th.

John Holden asked if the federal match generated would be entirely new and the reply was it would be. Paul Mateosian asked if the 50k contribution would generate more than a 50K federal match. The answer was that it would certainly generate a 50K match but how much more was uncertain. There was some concern that state agency money, or part of it, may be from a federal source and consequently would not generate a federal match. Dan Walters now reported that the confirmed savings was $225,000. From this he suggested reserving $134,000 for infrastructure improvements, leaving $90,600.

There was further discussion of federal matching and how much federal match could be leveraged by how large an appropriation to the land cover project. Several Board members noted that the federal match issue was critical to any appropriation and wanted absolute confirmation. Tom Howker noted that there are no percentage restrictions on how the Board makes a matching contribution.

John Holden said the chair would entertain a motion to approve a contribution of $50,000 to the land cover project subject to a federal match. There were a few more questions. Jim Page asked if the imagery would be all new except for the Landsat and the answer was yes – no change detection was planned. Will Mitchell asked if the imagery was proprietary or licensed and the answer was that it was not. Barbara Charry noted that the land cover data could be upgraded or have value added by breaking out more classifications.

Ray Halperin moved that the Board contribute to the land cover project up to but not to exceed $50,000 contingent upon there being at least $50,000 in federal match. Marylin Lutz seconded the motion. There were additional questions about the lack of competitive bid on the project, the funding mechanisms and the federal match. Dan Walters agreed to call the Attorney General's office and re-engage Dick Thompson in the conference for his observations. Will Mitchell moved to table the vote on the current motion to later in the meeting this was seconded and approved unanimously.

3. Annual Report

Jim Page opened discussion with a general critique that it was difficult to separate the Geolibrary from The GIS Executive Council. Other Board members suggested in general terms that it was difficult to tell where the Geolibrary stopped and BIS/MEGIS began. The countervailing point of view was that the coincidence of the Geolibrary and the GIS Executive Council was unlikely to be clarified any time soon. There were two specific suggestions. One was to remove "Appendix A" which had many details pertaining to state agencies. The second was to reword the report to stress the need for additional ongoing funding.

It was noted that much of the reason for this was a funding problem, that bond money cannot be used for administration. The Board does have the authority to charge fees for copies of data; Tom Howker agreed to take this up with the CIO and the BIS Director. Barbara Charry asked if it were not true that with bond money 3% could be used for administration. Ray Halperin answered that this was only true for the Treasury departments.

John Holden was asked what the deadline for the report was. He replied that it was due in January so it was already two months late in addition to which it rather must be submitted to the appropriate committees before the legislature adjourns, probably in April. John suggested that the Board members submit proposed changes to the annual report by e-mail to the staff. The deadline for input was agreed to be 5:00 PM Monday, Mar. 22nd. Staff would rework the report and send an updated version out to the members no later that the morning of Thursday the 25th. Board members would then vote by e-mail affirmative or negative on this draft of the report.

The Board returned to the motion previously made regarding the land cover project. The motion was read out again and John Holden called the roll for the vote. There were seven affirmative votes and one abstention. The motion carried.

The meeting adjourned at 12:16 PM.

Annual Report 2003

Report to The Legislature & The Joint Standing Committees on Natural Resources and State and Local Government

Maine's Library for Geographic Information—The GeoLibrary

TABLE OF CONTENTS

Maine Library of Geographic Information

Report to The Legislature – 2003 Activities

Legislative Background

This report serves as the Annual Report to the Legislature & the Joint Standing Committees on Natural Resources and State and Local Government as required under Sec. 1. 5 MRSA c. 158, SUBCHAPTER II-B MAINE LIBRARY OF GEOGRAPHIC INFORMATION.

List of acronyms & selected definitions

- MLGI ..... Maine Library of Geographic Information
- Board ..... Board of Directors for MLGI
- GeoLibrary ..... Common name for MLGI
- GIS ..... Geographic Information System
- Resolve 23 ..... Legislative committee that drafted the Plan resulting in the MLGI
- MeGIS ..... Maine Office of GIS
- GIS EC ..... State GIS Executive Council

The Maine Library of Geographic Information (MLGI) or the Maine "GeoLibrary" was established in April 2002 by L.D. 2116 "An Act to Establish the Maine Library of Geographic Information (Chapter 649)." The GeoLibrary is the statewide collection of GIS maps or "geographic information" that has been produced with state dollars. The library is a growing collection of standardized digital maps and tabular data that have been produced or acquired by all levels of government in support of public programs. Maintained properly and made available throughout the State, the GeoLibrary is a valuable asset for the ongoing work of government, business, and the public.

The GeoLibrary Board has three primary powers and duties. First, the governing Board must ensure that the GeoLibrary operates as a coordinated, cost-effective electronic gateway to public geographic information. The GeoLibrary's information should be widely available to government, business, and the public. This task is vital to ensure that: 1) scarce dollars are not wasted reproducing information that is already available, 2) everyone in the State has equal and fair access to these maps so that all citizens, towns and regions of the state can benefit from these investments, and 3) everyone is making decisions based on the same highly accurate information to promote efficiency and consistency in decision-making processes.

Second, the GeoLibrary Board is responsible for monitoring the needs of the State and promoting innovative uses of geographic information based on the identified needs of stakeholders. The Board sets program priorities and authorizes the expenditure of state funds for new GeoLibrary map development projects and services. New, more accurate information is needed to support statewide activities related to economic development, environmental protection, public safety, infrastructure development and natural resource management. The GeoLibrary must increase GeoLibrary holdings to provide the digital maps in support of these vital programs. The diverse nature of the Board provides the foundation of input from around the state to ensure equal and fair input and representation in the development of the GeoLibrary and related services.

Finally, the development of new geographic information and services necessitates the Board's active participation and engagement of the public in the development of standards, rules and policies for the GeoLibrary. Collaboration on strong

standards for the development of new digital maps and a consensus on policies for accessing the GeoLibrary, and services provided, will ensure the long-term usefulness and success.

Management, Membership, and Meetings

The GeoLibrary is governed by a Board of Directors appointed by the Governor, the Speaker of the House, and President of the Senate. The Board represents all major stakeholder groups identified in the Legislative Resolve 23 Study. The GeoLibrary was formed and began meeting monthly starting in November of 2002. Agendas and meeting notes can be found on the GeoLibrary website http://www.maine.gov/geolib/.

On appointment by the House and Senate, the GeoLibrary Board focused on establishing an operational structure. Leadership was selected and arrangements were made for administrative and technical staffing. A budget and work plan were generated covering the period from inception through FY04.

The Maine Office of GIS provides staff to the Board and its subcommittees. MeGIS also manages and operates the GeoLibrary website, GIS database and data access facilities including internet mapping services and data downloads. MeGIS works with all levels of government to document and add new GIS data to the GeoLibrary. MeGIS staff provide technical support and outreach services to Maine municipalities on behalf of the Board.

Representing Statewide Association of Regional Councils
John Holden, **Board Chair**
Senior Development Specialist
Eastern Maine Development Corporation

Representing Real Estate & Development Interests
Ed Suslovic, **Board Co-Chair**
Realtor
Ed Suslovic Real Estate

Representing Environmental Interests
Barbara Charry
Biologist/GIS Manager
Maine Audubon Society

Representing GIS Vendors
James Page
President, CEO
James W. Sewall

Representing Municipal Government
Paul Mateosian
Assessor
City of Bath

Representing State GIS Functions
Ray Halperin
Director of Information Systems
Dept. of Transportation

Representing Statewide Association of Counties
Robert Faunce
Land Use Planner
Consultant to Lincoln County

Representing Utility Interests
Dennis Boston
Senior Analyst
Central Maine Power Company

Representing UMaine
Marilyn Lutz
Director, IT Planning
University of Maine

Representing State Government
Richard Thompson
Chief Information Officer
Maine State Government

Representing Municipal Government
John Giles
GIS Coordinator
City of Portland

Representing GIS Vendors
Will Mitchell
President
Mitchell Geographics

Representing the Commissioner of Administrative & Financial Services
Robert Doiron
Supervisor Unorganized Territory
Maine Revenue Services

Representing the Public
Tom Asbeck
Vice President
Photo Science, Inc.

Representing the President of Maine Science & Technology Foundation – Vacant (organization was disbanded)

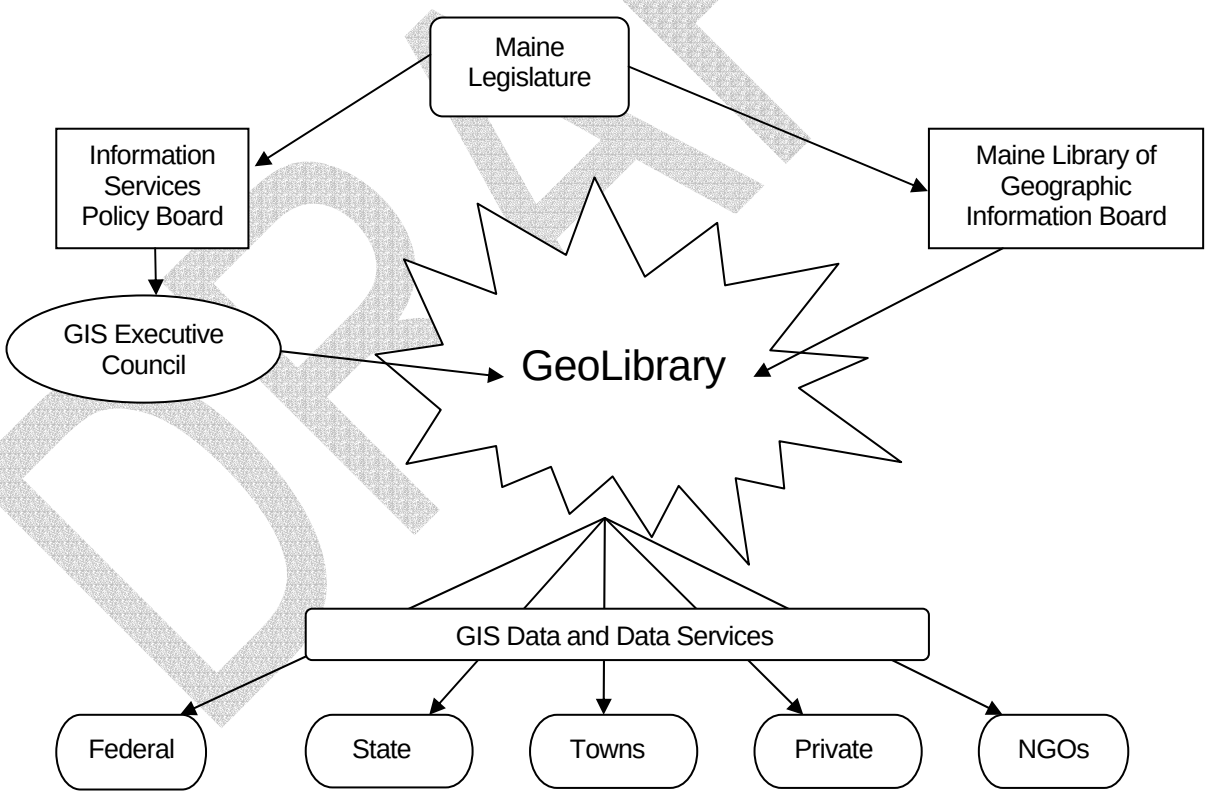
Partnerships

The GeoLibrary Board is forging partnerships to form a statewide network of government agencies (e.g., towns, state agencies, counties, regional councils, schools), to organize, catalog, and provide access to GIS information. Development of geographic information and full implementation of GIS by public entities is expensive. It is important that networking and library functions promote efficient use of limited public funds for the development and distribution of this valuable information. The Board announced a municipal grant program in 2003 for the digitization of municipal property maps to provide incentives for local government to begin participating in the Maine GeoLibrary program.

The GeoLibrary Board has established partnerships with the State's GIS Executive Council and Information Services Policy Board (ISPB) to share the development and maintenance costs of the GeoLibrary. During 2003 GIS Executive Council funds paid for most of the operational functions of the GeoLibrary's GIS database and data access facilities. The ISPB agreed to a wide area network fee assessment to pay for GeoLibrary Board staffing, technical support and outreach activities targeted to municipalities. Some of these funds also augment GeoLibrary and GIS EC efforts to work with government agencies to document and add new GIS data to the GeoLibrary.

The GeoLibrary developed and funded new GIS data development by leveraging federal funds with state approved bond funds. This resulted in three federal partnerships that have drawn additional federal dollars for Maine GIS initiatives. Both the United States Geological Survey and the Natural Resources Conservation Services have provided funds for a statewide digital orthophotography program targeted for municipal use. In addition, the Federal Geographic Data Committee awarded a grant to match GeoLibrary funds for the development of an Internet viewer/browser that will allow the general public to easily browse, view and download GIS data from the GeoLibrary.

Figure 1: Schematic view of the partnerships emerging from the GeoLibrary effort.



Financial Transactions

The GeoLibrary Board was given authority to administer $2.3M in State bond funds for capital investments in the GeoLibrary. The Board entered into a cooperative agreement with the United States Geological Survey to garner the required $1.6 million federal match for the approved bond funds. As a result, several joint funding agreements were

signed with USGS in 2003 to initiate the planned statewide digital orthophotography project which will occur in several phases over a three year period. Of the bond money, $306,729.50 was spent during calendar year 2003. A contract has been signed encumbering an additional $201,427. Additional contracts totaling an estimated $436,000 are currently pending to complete the first phase of the orthophotography project. An estimated $800,000 of the bond funds will be used to complete the second phase of the statewide project. The digital orthphoto program will be completed by December 2005.

A grant program has been developed by the Board. Grants are available to towns for digitization of property tax maps. Grant sizes can vary from $1,000 to $10,000, and $350,000 has been budgeted for the grant program. After the digital orthophoto program and the grant program is completed, $1,950,000 of the original $2.3 million bond fund will be expended.

While the GeoLibrary has $2.3 million dollars of bond funds to invest, the library is challenged to maintain its day to day operations. State law limits bond fund spending to capital projects only. Bond funds may not be spent on State employee salaries (Board staff) or on-going day to day operations. The State's ISPB approved an assessment of $144,000 per year for the first two years of the library's operation against users of the state's wide area network. These funds support the Board, subcommittee staffing, technical support, data entry, data distribution to municipalities and outreach programs. The State's GIS Executive Council provided $300,000 to support the operation of the Maine Office of GIS which is providing GIS database services and data access facilities to the GeoLibrary. The services provided by the Office of GIS, and shared by the GeoLibrary and GIS Executive Council, include administrative support, technical staff, metadata production, data entry, data warehousing, data management, public access and education. These two entities are the sole source of funding for Maine Office of GIS database, data access facilities, technical support and data entry. These moneys are insufficient for the annual support of the library. As the amount of information contained in the library increases, and use of the library increases, funding of $144,000 per year is significantly under the libraries operational requirements. The money may also no longer be available after July 1, 2004 unless it is re-approved by the ISPB. On-going funding of the library must come from a general fund allotment.

The bond authorization and the federal match provided capital revenues for the GeoLibrary during the two-year period that are 37% of the amount recommended by the founding Resolve 23 study. Revenues for ongoing operations derived from the GIS Executive Council and state WAN fund are 32% of the initial recommendation.

GeoLibrary Data Transactions and Technical Support

The GeoLibrary initiated two large projects in 2003. A statewide digital orthophotography project and a municipal grant program to support the digitization of municipal property maps were put in place. Both programs offer significant benefits for Maine towns of all sizes and location. The projects are described in detail below.

Statewide Digital Orthophotography

Digital orthophotography are scanned and geo-registered aerial photographs that have been processed to remove distortions in the photographs created by terrain elevation, scale and the tip and tilt of the camera caused by the airplane's motion. Digital orthophotography can also be thought of as a "photomap", having the scale and the measurement characteristics of a map, with the qualities and characteristics of a photograph. Instead of lines, symbols and contours of a typical map, these images show actual ground features from an aerial perspective. The level of detail seen in the digital orthophoto is dependent on many factors including the quality of the camera or sensor and height at which the airplane or satellite captured the photo.

Digital orthophotos are widely used as a visual base map or backdrop in GIS on which other layers of mapped information can be viewed or analyzed. Because of the "bird's eye view", orthophotos make it easy to view, recognize and understand the relationship of objects on the ground. The digital orthophotos are also used as the source for digitizing ground features to create GIS data layers for specific business functions including road centerlines, building footprints, farm fields, forest types, eelgrass beds and utility & road corridors. Change analysis can be conducted using orthophotos from different years. Digital orthophotos are used by all levels of government and the private sector in demanding technical operations. The public uses the orthophotos to view or gather general information to better understand their property, their town and for recreational purposes.

Figure 2: Example of the statewide color high-resolution digital orthophotos being produced by the GeoLibrary. E911 roads and names are "layered" on this map

Digital Property Maps

Also know as Cadastral Maps, digital property maps show the boundaries of the subdivisions of land for purposes of describing and recording ownership and taxation. Property Maps are one of the most important local government information assets. It is a fundamental base for many municipal activities. Although GIS parcel data cannot replace detailed ground surveys, the data does assist municipal officials with functions such as accurate property tax assessment, planning and zoning. Towns can link their maps to their assessor's databases and display local information. Officials can show tax-payers how proposed development or changes in municipal services and regulations will affect them and their neighbors. In many towns, parcel data also helps to provide public notices, plan bus routes, and carry out other municipal services.

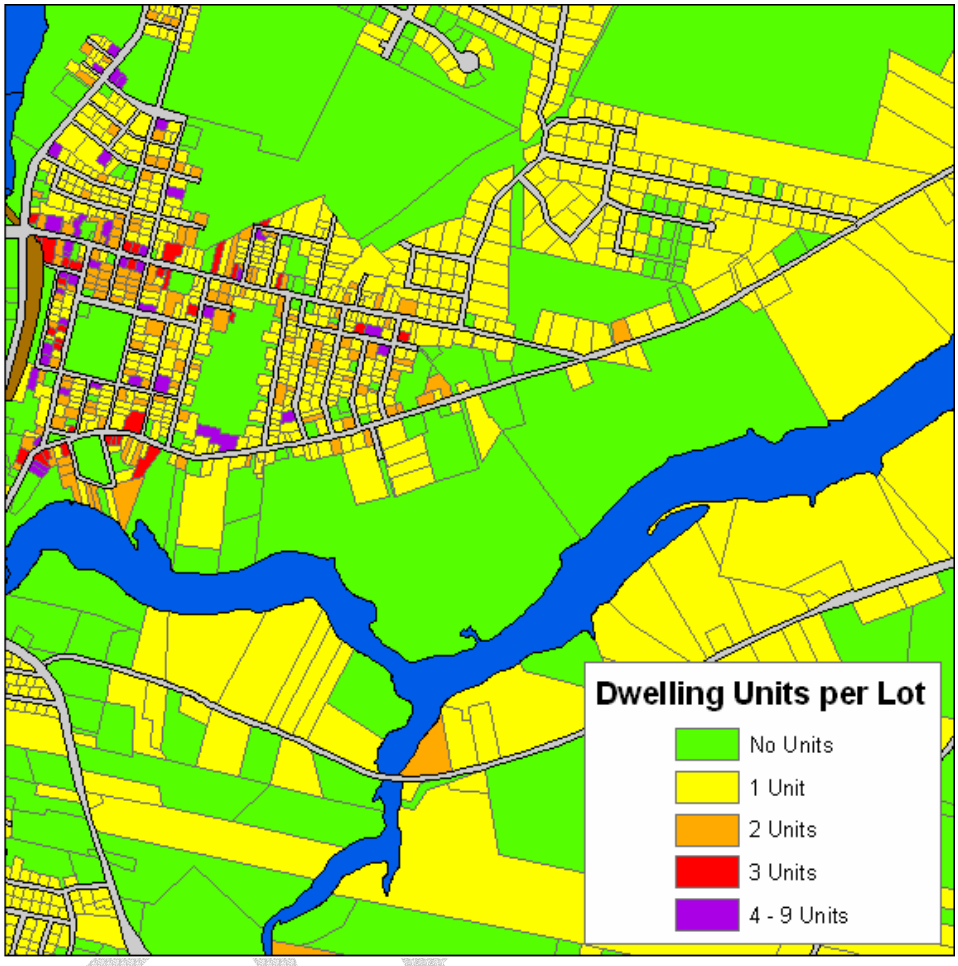


Figure 3. View of digital property map with individual properties color coded for the number of dwelling units on that lot.

A wide variety of new GIS layers were added to the GeoLibrary in 2003. Many state agency layers were also updated and republished. The following is a list of the new and updated layers added to the GeoLibrary in 2003:

ARMORIES *Maine Office of Geographic Information Systems (MEGIS)*
point locations of Maine Army National Guard armories

BDRKSWPA *Maine Department of Human Services (MEDHS), Drinking Water Program*
bedrock source water protection areas in Maine

BOATLNCH *Maine Department of Conservation (MEDOC), Bureau of Parks and Lands (BPL)*
boating facility locations throughout Maine

BRDGS *Maine Department of Transportation (MEDOT)*
locations of public bridges

BRDGS6YR *Maine Department of Transportation (MEDOT)*
locations of bridges identified in MEDOT's 2004-2009 Six-Year Plan

CEMA *Maine Office of Geographic Information Systems (MEGIS)* 20030814
point locations of all Maine County and some Maine Municipal Emergency Management Agency business offices

CLASS03E *Maine Department of Marine Resources (MEDMR)*
status of molluscan shellfish growing area classifications for the coast of Maine east of Fort Point Stockton Springs

CLASS03W *Maine Department of Marine Resources (MEDMR)*
contains status of molluscan shellfish growing area classifications for the coast of Maine west of Fort Point Stockton Springs

DIRSHED *Maine Department of Human Services (MEDHS), Drinking Water Program (MEDWP)*
direct watersheds of surface waters that are sources of Maine public water supplies

EHEAGLE *Maine Department of Inland Fisheries and Wildlife (MDIFW)*
bald eagle nest sites in Maine mapped as Essential Habitat

EHPLVTRN *Maine Department Inland Fisheries and Wildlife (MDIFW)*
Piping Plover and Least Tern nesting, feeding, and brood-rearing areas identified and mapped as Essential Habitat

EHRTERN *Maine Department of Inland Fisheries and Wildlife (MDIFW)*
Roseate Tern nesting areas identified and mapped as Essential

ESA03 *Maine State Planning Office (MESPO)*
Economic Summary Areas

FIRE *Maine Office of Geographic Information Systems (MEGIS)*
locations of Maine municipal fire stations and fire houses, occupied and unoccupied

GEOMCDCCD *Maine Office of Geographic Information Systems (MEGIS)*
GEOCODES, by the COUSUB number assigned by the US Census Bureau to Maine census county divisions (CCDs

HCL_L01, 02 *Maine Department of Transportation (MEDOT)*
public roads and crash location data

HCL_N01, 02 *Maine Department of Transportation (MEDOT)*
public roads and crash location data

HOSPITAL *Maine Office of Geographic Information Systems (MEGIS)*
locations of non-psychiatric hospitals (acute care facilities)

IMPOUNDS *Army Corp of Engineers (USACE), Maine Department of Environmental Protection (MEDEP) (comp.*
point locations of dams, levees, and impoundments

INDEX_HF *Maine Department of Environmental Protection (MEDEP)*
spatial index of photo names and locations for the Maine GIS image mosaic ORTHO_HF

INTAKES *Maine Department of Human Services (MEDHS), Drinking Water Program (MEDWP)*
location of a public water supply surface water intakes

MECNSLND *Maine State Planning Office (MESPO), Richard D. Kelly Jr.*
conservation lands ownership boundaries for Maine land in federal, state, and non-profit ownership with easements

MEDOTPUB *Maine Department of Transportation (MEDOT)*
public roads for Maine

MEGRASS *Maine Department of Marine Resources (MEDMR)*
Maine's eelgrass meadows, which form an important aquatic habitat for the state

MERAIL24 *Maine Office of Geographic Information Systems (MEGIS)*
statewide railroad coverage for Maine

MILEPOST *Maine Department of Transportation (MEDOT)*
point data reflecting the milepost markers along the Maine Turnpike/Interstate road

MOBCORR *Maine Department of Transportation (MEDOT)*
road centerlines along arterials designated "Mobility Corridors" as part of the MEDOT statewide Access Management program

ORTHO_HF *GlobeXplorer*
high resolution 24-bit color CITIPIX Ortho-rectified Digital Images

POLICE *Maine Office of Geographic Information Systems (MEGIS)*
point locations of Maine municipal, county and state police stations and substations

REDCROSS *Maine Office of Geographic Information Systems (MEGIS)*
point locations for chapters in Maine

RESCUE *Maine Office of Geographic Information Systems (MEGIS)*
Maine municipal or private ambulance/rescue units

RETROART *Maine Department of Transportation (MEDOT)*
road centerlines along arterials designated "Retrograde Arterials" as part of the MEDOT statewide Access Management program

SCHLIB *Maine Office of Geographic Information Systems (MEGIS)*
point locations of libraries and educational

WBDME6_A *U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS)*
hydrologic unit boundary layer of Level 6 (12-digit) SUBWATERSHEDS for Maine

The GeoLibrary created a CD product for municipalities and for schools and began distribution in 2003. The CDs contain the entire contents of the GeoLibrary for a given town and all adjacent towns. Many of the municipal CDs that were generated were distributed by the State Planning Office through regional government in support of comprehensive planning grants to municipalities. The following municipalities received the GeoLibrary GIS CD product:

Abbot
Acton
Addison
Alexander
Allagash
Alna
Appleton
Baileyville
Bath
Beals
Belfast
Bethel
Bingham
Blue Hill
Bowdoin
Bradley
Brewer
Bridgton (2)
Brooks
Brooksville
Brownfield
Brunswick
Calais
Canaan
Casco
Castle Hill
Chapman
Chelsea
Chester
China
Columbia
Corinna
Cumberland
Detroit
Dexter (2)
Dover-Foxcroft
Eastport
Ellsworth
Eustis
Farmingdale (3)
Fort Fairfield
Franklin
Freeport (2)
Fryeburg
Gardiner
Gouldsboro
Gray
Greenwood
Harpswell (3)
Harrison (2)
Hartford
Hermon
Hersey
Howland
Jackman
Jonesboro
Jonesport (2)
Kittery
Lebanon
Lee
Lewiston
Lincolnville
Livermore
Ludlow
Lyman
Machiasport
Mapleton
Mariaville (2)
Merrill
Millinocket
Milo
Montville
Mount Desert (2)
Naples (2)
New Canada
New Portland
Newcastle
Newport
Nobleboro (2)
North Yarmouth
Northfield (2)
Northport
Norway
Oakland
Orient
Paris
Parlin Pond Twp.
Patten
Penobscot
Peru
Phillips
Poland
Portage Lake
Presque Isle
Rangeley
Raymond (2)
Readfield (3)
Rockland
Rockport (2)
Sabattus
Sandy Bay twp.
Sanford
Scarborough (2)
Searsport (2)
Sebago
Sebec
Sidney
Smyrna
Solon
South Berwick
South Bristol
South Portland
Southport
Stacyville
Standish (2)
Sumner
Swanville
The Forks Plt.
Thomaston (2)
Thornton
Topsham (2)
Tremont
Troy (2)

Union (2)
Veazie
Verona (2)
Vinalhaven
Waldoboro
Wallagrass
Washington (2)
Weld
Wells
West Bath (3)
Westfield
Westmanland
Whitefield (2)
Whiting (2)
Windham (2)
Windsor
Wiscasset
Woodstock (2)
Woolwich (2)
Yarmouth (4)

The following ***schools*** received the GeoLibrary GIS CD product:

Auburn
Augusta (6)
Bangor
Bar Harbor
Biddeford
Bingham (2)
Blue Hill
Buckfield
Camden
Castine
China
Cumberland
Damariscotta
Dover-Foxcroft
Dresden
Ellsworth
Fairfield
Fairfield
Farmingdale
Farmington
Farmington
Farmington
Farmington (5)
Gardiner (3)
Gilead
Greenville (2)
Guilford (2)
Hartford
Hope
Lincoln
Lincolnville
Lisbon
Milford
Mount Desert
Naples (2)
Newcastle
Northport
Old Town
Portland (2)
Pownal
Readfield (3)
Richmond
Sanford
Scarborough (2)
Solon
Standish
Stonington
Stratton
Sumner
Swan Island
Union (2)
Warren (2)
Washington (2)
Waterboro
Waterville (2)
Weld
West Paris
Whitefield
Winthrop
Wiscasset
Woolwich
York

Visits to and the amount of information downloaded at the GeoLibrary web site has increased significantly through 2003. Average weekly web site hits exceed 100,000, and over 5,000 weekly visitors download from 6 to 10 gigabytes of information. MeGIS hosts the GeoLibrary web portal where local government, the private sector and the public can download GIS data.

Many of the individuals who access and download GIS data also take advantage of technical support available through the Maine Office of GIS. The questions frequently involve GIS implementation, software and data. Following is the list of organizations that received technical support in 2003.

State Agency Customers

Administrative & Financial Services, Dept. of
Agriculture, Dept. of
Atlantic Salmon Commission
Behavioral and Developmental Services, Dept. of
Central Maine Power
Conservation, Dept. of
Corrections, Dept. of
Defense, Veterans & Emergency Mgmt, Dept. of
Economic & Community Development, Dept. of
Economic Development Districts, Dept. of
Education, Dept. of
Environmental Protection, Dept. of
Historic Preservation Commission
Human Services, Dept. of
Inland Fisheries & Wildlife, Dept. of
Labor, Dept. of
ME Science & Technology Foundation
Maine State Housing Authority
Marine Resources, Dept. of
Professional & Financial Reg., Dept. of
Public Safety, Dept. of
Public Utilities Commission
State Planning Office
Transportation, Dept. of
University of Maine System/UNET

General Public

Northern Geomantics
Frenchman's Bay Conservancy
TRC Environmental
Mead Paper
Delorme Mapping
James W. Sewall
Blue Marble
Northern Ecological Associates
RKG Associates
Rutgers University
Penobscot Nation
The Champlain Commission
Faragut Systems
Project SHARE (Salmon Habitat and River Enhancement)
Appalachian Mountain Club
Woodard & Curran
CLD Engineering
Applied Geographics
Parsons Engineering
Maine Census Consortium
University of Massachusetts
Mount Holyoke College
Unity College
Colby College
Yale University
Massachusetts Institute of Technology
University of Florida
Society for Protection of Forests
Wolfe Public Relations
Summit Environmental
Navionics
Geotrans
Consulting for Creative Options
Utilities, Inc.
Gannett Fleming
U.S. Positioning Group, LLC
Washington County Consortium for School Improvements
Robert J. Bills Associates
Friedman Marketing
Sanborn Associates
Plymouth State College
Colorado College
Notre Dame Elementary School
ENSR
Blackrock Design
Quebec-Labrador Foundation
University of North Carolina at Wilmington
Newton Manufacturing Company
Brunswick Police
Civil Consultants
Project SHARE
Natural Resources Council of Maine
University of Madras
Khuzestan Water and Power Authority
Midlands State University
Castleton State College
Ohio University
Bae Systems
International Paper
Mitchell Geographics, Inc.
RITI
Sewall Holdings Company
SPOT Image Corporation
Kansas State Library
Gulf of Maine Council
Community Science Network
Brodie Group Atlantic
Mountain Counties Heritage

Local, Federal and Other Non-SLA Governments

Federal Bureau of Investigation
Federal Emergency Management Agency
U.S Fish and Wildlife
U.S. Geological Survey
U.S. Geological Survey in Maine
U.S. Geological Survey in Massachusetts
U.S. Geological Survey in Vermont
Natural Resources Conservation Service in Maine
Natural Resources Conservation Service in New Hampshire
New Hampshire GRANIT
Environmental Protection Agency
Town of Bar Harbor
Maine Office of Tourism
Office of Rural Health
Maine State Police
New Brunswick
Council of Governments in Eugene, Oregon
Androscoggin Valley Council of Governments
Southern Maine Regional Planning Commission
Central Maine Regional Planning
Greater Portland Council of Governments
Eastern Maine Development Corporation
Massachusetts GIS
Vermont GIS
New York Department of Environmental Protection
Franklin County Development
Northwest Aroostook UT
Hancock County Planning Commission

National Oceanographic and Atmospheric Administration
National Science Foundation
Town of Harpswell
Town of Winter Harbor
Town of Gray
Town of York
Town of Vinalhaven
Town of Turner
City of Westbrook

Standards and Specifications Adopted

In November of 2002, under the auspices of the Maine GeoLibrary Board, a subcommittee was formed to study and recommend specifications for a statewide orthophotography project that would benefit all Maine municipalities and State of Maine agencies. Membership consisted of representatives from the following organizations: Maine Department of Environment Protection, City of Portland, Maine Emergency Management Agency, Maine Forest Service, Maine Office of GIS, Greater Portland Council of Governments, Maine Department of Transportation, Island Institute, Maine Drinking Water Program, and United States Geological Survey. The subcommittee worked out the basic specifications for the new statewide orthophotography project.

The GeoLibrary Board also authorized a Digital Parcel Standards Subcommittee to develop published standards for digital tax parcel data in anticipation of a grant program for the digitization of municipal property maps. The committee was composed of representatives from the following public and private sector organizations: Bureau of Information Services, Central Maine Power Company, City of Bath, City of Portland, Department of Conservation, Department of Transportation, Greater Portland Council of Governments, Hancock County Planning Commission, Island Institute, James W. Sewall Company, Maine Revenue Services, Maine State Archives, Northern Maine Development Commission and the State Planning Office. The Subcommittee, through meetings and electronic review, developed standards for the acceptance of parcel (cadastral) spatial and tabular data into the GeoLibrary. These specifications and standards were formalized into publications which were then presented along with certain recommendations to the GeoLibrary Board in 2003. Complete meeting minutes and publications can be found on the GeoLibrary web portal.

Disputes

To complete the digital orthophotography project, which costs approximately $3.2 million including federal matching funds in a more economical manner, staff of the GeoLibrary recommended that recently produced existing photography covering Cumberland County and the Lewiston/Auburn area be purchased versus being updated and recreated as part of the plan to develop orthophotography for the entire state. Given the purchase, new orthophotography would not be developed for this area and cost savings would be realized extending the Board's funds for this project further. In addition, the GeoLibrary could bring the previously proprietary data into the public domain and make orthophotography for this area available sooner than later to many stakeholders.

The recommendation made to the Board was two-fold: a $133,104 purchase of the imagery directly from a company called GlobeXplorer and a payment of $53,000 to the Greater Portland Council of Governments (GPCOG) to cover expected loss of revenue from lost future sales of these products (because the information would be made available for free over the internet). The Board decided to purchase the orthophotography product from GlobeXplorer, but not to pay GPCOG $53,000.

GPCOG had signed a contract with Altaphoto Inc. in 2000 to produce the digital aerial imagery that forms the basis for digital orthophotography. GPCOG claims that Altaphoto gave them "a bundle of product rights" for the aerial photography and all byproducts which entitled them to some percentage of all future revenue. A copy of the contract has not yet been presented to the Board. The photography was flown by Altophoto and delivered to GPCOG. Subsequently, Altaphoto was purchased by Kodak in 2001. Kodak produced area wide orthophotography from the aerial photography on speculation of future sales of which, according to GPCOG, GPCOG would also get a percentage. This division of Kodak went bankrupt in 2003 and the orthophotography products were acquired by GlobeXplorer.

GlobeXplorer has stated that they have clear title to the information which was purchased and no payment was needed. The digital orthophotos purchased from GlobeXplorer are derived from the same base information that the Greater Portland Council of Governments created but the data has been processed further by GlobeXplorer creating a different product. The Greater Portland Council of Governments does not agree with this action.

The Board recognizes that it may encounter a variety of situations whereby parties feel that they are impacted negatively by making data available for free over the internet. The GeoLibrary Board has seriously considered and discussed this action numerous times. The Board is conducting a formal appeal process but the matter, as yet, has not been resolved.

Legislation and Other Issues

Legislation creating the Maine Library of Geographic Information designated a Board seat to be appointed by the President of the Maine Science and Technology Foundation. The Foundation no longer exists. Legislation is required in selecting another individual representing a different stakeholder group.

While the GeoLibrary has $2.3 million dollars of bond funds to invest, the library is challenged to maintain its day to day operations. State law limits bond fund spending to capital projects only. Bond funds may not be spent on State employee salaries (Board staff) or on-going day to day operations. The State's ISPB approved an assessment of $144,000 per year for the first two years of the library's operation against users of the state's wide area network. These funds support the Board, subcommittee staffing, technical support, data entry, data distribution to municipalities and outreach programs. These moneys are insufficient for the annual support of the library. As the amount of information contained in the library increases, and use of the library increases, funding of $144,000 per year is significantly under the libraries operational requirements. The money may also no longer be available after July 1, 2004 unless it is re-approved by the ISPB. On-going funding of the library must come from a general fund allotment.

The entire operating budget of the Maine Office of GIS clearinghouse and data management services provided to the GeoLibrary and GIS Executive Council is derived from ***voluntary*** service level agreements with state agencies forming the GIS EC and a ***temporary*** allocation from the state WAN fund in support of the GeoLibrary. These sources of revenue fund all data management and data distribution activities including CD products for towns and schools, state agency wide area network access to the central database, internet mapping services and data download capabilities from the MeGIS website. Technical support, checking and entry of new data into the GeoLibrary, staff support for the GeoLibrary and overall administration and management are paid for by the voluntary agency service level agreements and temporary WAN allocation.

Summary

The following is a bulleted summary list by category of what the Board and its partners have accomplished since the Board's first meeting on November 21, 2002. Staffing for these projects has been provided by the MeGIS.

Administration and Management

- Officers elected and Board operations and staffing determined
- Two-year budget and work plan formulated based on Resolve 23 Legislative Study and authorized bond funds
- Cooperative agreements established with US Geological Survey to initiate new aerial photography, digital elevation models and full color, high resolution orthophotography. These agreements will generate a total of $1.6 in federal contribution
- Acquired full color, high resolution, 2001 orthophotography for 38 towns covering all of Cumberland County and adjacent areas
- Matching grant of $25,000 in federal funds to develop GeoLibrary browser/viewer

Project Management

- Multi-year project to develop statewide digital orthophotography initiated
- 2003 aerial photography completed for 27% of Maine
- Production of 10 meter digital elevation models
- Digital Property Map Standards
  http://www.maine.gov/geolib/subcommittees.htm
- Development of specifications for statewide orthophotography project
  http://www.maine.gov/geolib/subcommittees.htm
- Development of Parcel Grants Program, designed to assist municipalities in creating, upgrading and converting digital parcel data to MLGI standards.
  http://www.maine.gov/geolib/subcommittees.htm

Database Administration and Management

- New GeoLibrary databases created for orthophotography
- Maintained GeoLibrary database including backup services
- Maintained access services and user software licenses
- New versions of software tested and installed
- Reviewed and added 37 new or updated data layers to the library in FY03 .http://megis.maine.gov/catalog/
- Update Maine Data Development Standards in preparation for GeoLibrary Activities

Web Services

- GeoLibrary web portal established (www.maine.gov/geolib) including meeting agendas, minutes and GeoLibrary services
- Published all geographic data updates via Data Catalog on MEGIS website
- Software for universal internet access installed and development environment established

Programming

- Developed web service presenting available digital orthophotography http://megisims.state.me.us/website/orthomap/viewer.htm
- Developed stakeholders database and web-based form for registrations

Outreach & Coordination

- Maine Revenue Service Tax Camp workshop
- Maine Municipal Association Annual meeting exhibit & demonstration
- DOT Annual Transportation Conference exhibit & demonstration
- Gates Foundation Summer Leadership Forum presentation
- GIS Day at the Capitol Hall of Flags exhibits
- Maine Science Teachers Convention exhibit and demonstration
- Maine GIS Users Group presentations
  - Distributed digital data in collaboration with GIS EC on CDs with agency GIS data, metadata and a free version of ArcExplorer to:
    - 145 municipalities
    - 64 schools
- 270 hard copy constraints maps also produced for municipalities

Technical Support

- Assistance provided to over 20 state agencies, 75 members of the general public and 50 local, federal and other government entities.

Appendix A - Relation to State Agencies and Maine Office of GIS

The State of Maine has had over ten years of experience and success in implementing GIS technology in state agencies. All state agencies, as well as GIS-capable institutions outside of state government, have access to high quality, digital base map information through the cooperative efforts of the GIS Executive Council for Geographic Information (GIS EC) and the Maine Office of GIS (MeGIS).

The GIS Executive Council for Geographic Information (GIS EC) was chartered in 1996 by Maine's Information Services Policy Board (ISPB) to oversee the operation of the Office of Geographic Information Services and the development of a statewide geographic information system. The GIS EC reports to the ISPB, promotes the use of GIS, provides leadership, direction, and funding for GIS functions which are common among the state departments and agencies served by MeGIS. The GIS EC reviews needs, sets planning and program priorities, approves the MeGIS budget, and work plan. The GIS EC formed a GIS Technical Committee consisting of representatives from state agency GIS staff, and assists in the detailed aspects of Geographic Information Systems implementation. A GIS EC representative was appointed to the MLGI Board.

Maine State agencies use GIS to improve services, minimize duplicative efforts, and save money. Cooperatively funded base layers, automated from USGS topographic maps at 1:100000 and 1:24000, have provided a Maine GIS library of GIS data and a cartographic base for GIS mapping for state agencies since 1995. Cooperative support and funding of

central functions at MeGIS, provides both WAN and Internet access to framework and agency datasets, GIS training and common infrastructure. Many agencies use GIS as a primary tool on their desktop, for example, for application review, implementation of environmental regulation and mitigation, for road design and maintenance, and emergency services planning. Some agencies use GIS as their primary means for producing on-demand hardcopy maps of natural resource information for distribution to the public. While all these agencies have individual needs, they all rely on MeGIS for base map information and digital data distribution.

The GIS Executive Council's 5-year GIS Strategic Plan, implemented in 2000, recognized the importance of strengthening and expanding outreach, technical support, database administration and database management services to serve the growing need of local government. As a result the GIS EC recommended:

1. That a formal user-requirements analysis be undertaken to accommodate the expanding user base,

2. To develop implementation strategies for a statewide GIS,

3. To determine specific statewide infrastructure needs with respect to the new technology, and

4. Additional state support for functions that directly serve local government and the general public and to promote compatible systems at the municipal level.

The Strategic Plan envisioned a new state position dedicated to local government GIS activities and an outreach council of citizens, municipalities, academia, and small associations to guide and promote GIS outside State government. The GeoLibrary, with its private-public Board of Directors now serves in that function.

The agency-supported annual work plan for MeGIS has provided foundation support for the GeoLibrary. The database management activities at MeGIS are the heart of the Maine GIS program. All the services of a multi-user and multi-purpose GIS database rest on the assurance that high quality, standardized, up-to-date digital data is available for secure but easy access and distribution. This assurance is won through effective database management. Data management consists of standards and protocols for acquisition, storage, documentation, update, coordination and secure delivery of the data. MEGIS has focused on these data management tasks in building the Maine GIS database. Partnership with the Bureau of Information Services (BIS) has made available a professional, secure environment and network for building GIS infrastructure. These have made the Maine GIS Internet Data Catalog and Internet map services possible. The availability of an Oracle database at BIS has also been essential to meet the storage requirements of new high resolution imagery and the delivery requirements of SDE format GIS layers.

To date Maine's multi-user, multipurpose GIS database has been built through the voluntary cooperation, funding, and contribution of state agencies to the data repository housed at MeGIS. Digital automation specifications for cooperatively funded base layers have been stringent. Each automated quadrangle was validated within strict and standardized parameters for correct geo-referencing, projection, line-work quality, and attribution. In addition, over 100 thematic layers have been contributed by state agency GIS projects and other Maine GIS users. In 2002, a second edition of "Data Standards for Maine Geographic Information Systems" was approved by Maine's Information Services Policy Board. Compliance with data and documentation standards on contributed data has been voluntary. MEGIS data management for this data has included complete documentation and review of each contributed data layer, as well as security, storage, update, and distribution.

With all data, the detail and quality of the end product rests on the scale and integrity of the data source and with automation technique. All data possesses some of the limitations of source material. Complete documentation has been a key component of MEGIS data quality assurance to state agencies and Maine GIS users. In 2000, MEGIS upgraded all documentation of Maine GIS data to comply with Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata. MEGIS works closely with data developers to provide technical support for data standardization and documentation.

The availability of global positioning technology, remote sensing data, digital orthophotography, and digital elevation models, is driving Maine GIS toward the refinement or replacement of base layer themes, and improved classification of mapped features. The standards for automation of the themes and attribution of the mapped features must change as methods of data automation are modified to utilize the new source data. Data management tasks must reflect this also, with documentation of classification schemes and feature representation being of foremost importance. Maine GIS

recommendations to document feature location, standardize codes, and implement unique feature identifiers, will help all Maine GIS users obtain the greatest value from any new data development effort. With cooperative effort MLGI, the GIS Executive Council and MeGIS can provide an efficient public delivery of GIS data.

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